Extension For Stateful PCE to allow Optional Processing of PCEP Objects

PCE WG, IETF105, Montreal, Canada

draft-dhody-pce-stateful-pce-optional-04

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Background

- RFC 5440 has specified P and I flags
  - P flag for: must **P**rocessing or optional
  - I flag for: whether to **I**gnore for optional;
- RFC 8231 has specified the Stateful PCE
  - The P and I flags of the PCEP objects defined in the current document MUST be set to 0 on transmission and SHOULD be ignored on receipt since they are exclusively related to path computation requests.
  - The behavior for P and I flag in OTHER objects was not specified.

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
| Object-Class  |   OT  |Res|P|I|       Object Length (bytes)   |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|                                                               |
//                       (Object body)                        //
|                                                               |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```
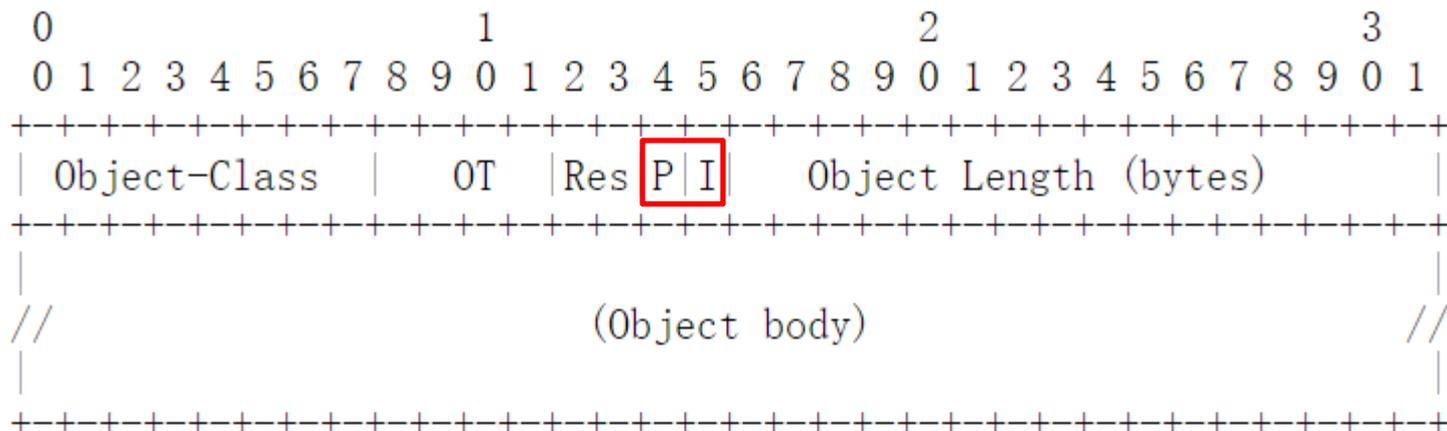
Figure 8: PCEP Common Object Header

Draft Summary

- Clarifies how the P and I flag are used:
  - Identify the optional objects;
  - Applicable to PCRpt/PCUpd/PCInitiate message;
- Updates the handling of unknown objects based on these flags!

Capability

- A new flag introduced in STATEFUL-PCE-CAPABILITY TLV
  - R (Relax) Flag;
- If R (Relax) bit is set, then the PCE has the capability to process P/I flag in the way indicated by this draft;
  - Need to be set from both peers;

P/I Flag Usage

- P Flag
  - Indicate whether the object is mandatory (1) or just optional (0);
  - Indicated by PCE in PCUpd/PCInitiate, and by PCC in PCRpt;
  - P=1, means the object MUST be taken into account;
  - P=0, means object can be ignored;

- I Flag
  - PCUpd, whether (1) or not (0) an optional object was processed, indicated by PCE;
  - PCRpt, whether (1) or not (0) an optional object was processed, indicated by PCC;
  - Meaningless in PCInitiate;

Processing of Unknown Objects

- Checking P flag and process as follow:
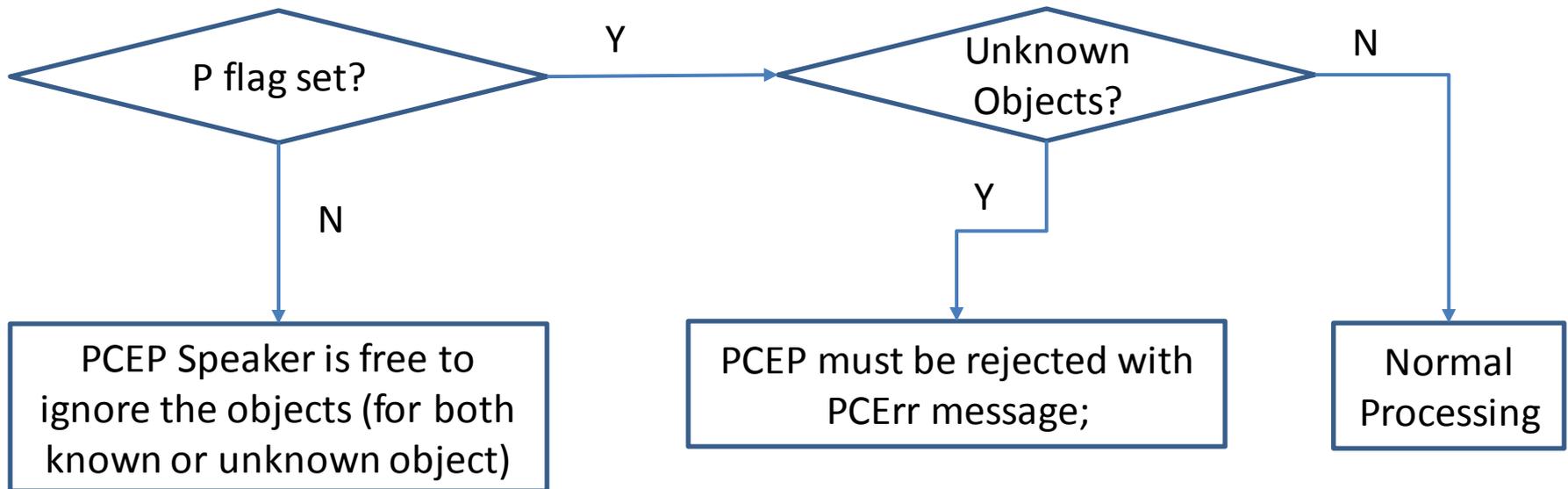
- LSP Error Code TLV defined in RFC8231 is used here.

Status & Next Step

- Updated with adding the delegation scenario;
- Problem statement confirmed on the list;
  - It is quite useful;
- Request WG adoption.

THANK YOU!